DOCUMENT RESUME

ED 470 187 IR 021 629

AUTHOR	Owen, Dennis O.
TITLE	Simple Techniques for Using the Internet as a Supplemental Course Resource.
PUB DATE	2001-11-00
NOTE	8p.; In: Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Computer Uses in Education; Curriculum Development; Educational Resources; Educational Technology; Instructional Materials; Supplementary Reading Materials; Technology Integration; *World Wide Web

ABSTRACT

With the wide acceptance of the Internet as an information and communication source, students have come to expect it to supply supplemental course material and other enhancements to their traditional classroom activities. The World Wide Web has become so integrated into all aspects of computer usage that most personal productivity applications provide Web tools as part of the software. The degree of this integration varies with the application and the vendor, but these rudimentary Internet tools exist in much of the software educators use in course preparation and delivery. Through the application of these simple tools to the documents, spreadsheets, communications, and presentation currently generated, they can easily be made available to students through a Web page. Lecture notes, presentation slides, study guides, practice quizzes, solutions, and homework guides are just a few of the documents educators generate with a word processor. These can easily be converted to a format that is viewable over the Web. Grade postings and other data generated with a spreadsheet can be made available via the Web in a similar manner. The on-demand availability of the Internet offers several advantages. Students can access information when they are ready to study, and when specific information is needed to finish an assignment. As a result of this information availability, the instructor will spend less time redistributing lost or missed information, and less time answering the same question from several different students. On-demand information availability is beneficial to both traditional and non-traditional learners. Traditional students maintain the structure and control of traditional instructional methodologies while having increased access to support information. Non-traditional students are provided a mechanism that places them personally in control of what they learn, and when they learn it. This control is a necessary component of successful learning in the non-traditional student population. The Internet offers the student more timely access to specific course-related information with less effort on the part of the instructor. Add in the wide acceptance and availability of the Web, and new opportunities for course and learning improvement become evident. With minimal effort, the Internet can enhance almost any course. (Author/AEF)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 470 187

Simple Techniques for Using the Internet as a Supplemental Course Resource

By: Dennis O. Owen

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

P. Harris

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

IR021629

BEST COPY AVAILABLE

Simple Techniques for Using the Internet as a Supplemental Course Resource

Dennis O. Owen
Purdue University

Abstract

With the wide acceptance of the Internet as an information and communications source, students have come to expect it to supply supplemental course material and other enhancements to their traditional classroom activities. Students have grown accustomed to the 'anytime / anywhere' capability and flexibility offered by the World Wide Web. This media will become a vital exchange mechanism between educators and students. However, the technologies that support the Web are very different from those traditionally used in the preparation and delivery of course content. This can make entry into the Internet course support arena a challenge for educators not familiar with its inner workings.

The same Internet acceptance and usage expectation that is forcing educators into the World Wide Web has also provided us with some simple tools and techniques that can be employed to begin the integration of the Web into course support. The Web has become so integrated into all aspects of computer usage that most personal productivity applications provide Web tools as part of the software. The degree of this integration varies with the application and the vendor, but these rudimentary Internet tools exist in much of the software educators use in course preparation and delivery. Through the application of these simple tools to the documents, spreadsheets, communications, and presentation currently generated, they can easily be made available to students through a Web page. Lecture notes, presentation slides, study guides, practice quizzes, solutions, and homework guides are just a few of the documents educators generate with a word processor. These can easily be converted to a format that is viewable over the Web. Grade postings and other data generated with a spreadsheet can be made available via the Web in a similar manner.

The on-demand availability of the Internet offers several advantages. Students can access information when they are ready to study, not when the instructor is available to present it. Students can access the specific information needed to finish a specific assignment. As a result of this information availability, the instructor will spend less time redistributing lost or missed information, and less time answering the same question from several different students.

On-demand information availability is beneficial to both traditional and non-traditional learners. Traditional students maintain the structure and control of traditional instructional methodologies while having increased access to support information. Non-traditional students are provided a mechanism that places them personally in control of what they learn, and when they learn it. This control is a necessary component of successful learning in the non-traditional student population.

The Internet offers the student more timely access to specific course-related information with less effort on the part of the instructor. Add in the wide acceptance and availability of the Web, and new opportunities for course and learning improvement become evident. With minimal effort, the Internet can enhance almost any course.

Introduction

The Internet is a widely accessible, on-demand source of information. Students have come to rely on the Internet for most of their information gathering activities. They go to the Internet for information on anything from the configuration of a networking cable to the show times at the local movie theater. Three fourths of all college seniors use the Internet in their job search. (Shelly 2000) Given this wide acceptance, it is reasonable to assume that students will also look to the Internet for course related materials such as lecture notes, assignments, grade postings, and even general communications.

Many institutions have a Web presence that is maintained by the institution. Frequently, the homepage of the institution's website will have links to individual department pages. These departmental pages will in turn have links to individual course pages. The institution will often provide a page for each course based on a common temple that is used for all courses institution-wide. This common template often includes standard links to common course page content such as grades and class notes. The faculty associated with a specific course are usually given access privileges to the folders that contain the Web pages for that course, thus allowing them to create and maintain course related Web content.

The Web presence for the course is in place. However, course information is available on the World Wide Web only if the course instructor makes it available. The tools and technologies that have traditionally been used to create World Wide Web content are different from those used to create normal course materials. Learning these new tools requires an investment of time that many faculty cannot justify. For this reason, many faculty do not support their courses on the Web even though a Web presence is already available.

The same wide acceptance of the Web as the de facto information source has encouraged many software developers to include Web support features in applications that have not traditionally been associated with Web content development. Currently, many of the applications that have traditionally been used in course material development include basic Web content development features. Personal productivity tools like word processors, spreadsheets, and presentation software now provide simple tools to generate Web content. With a basic understanding of the organization of a Web page, browser operation, and the tools available in current personal productivity software, most faculty can develop Web content to support their courses.

Web Page Organization

The World Wide Web is actually a wide area network of over 4 million loosely connected servers that provide information upon request. (Goldman 1997) These servers hold the files that create Web pages. When the server receives a request to view a Web page, the server downloads the files needed to create the page to the requesting computer.

Each Web server is identified by a unique name called a URL, short for Uniform Resource Locator. A URL consists of protocol specification, a domain name, and optional path to a specific Web page. URLs are specified using the familiar format **http://www.domain.com/path/page.htm**[2] In this example the protocol is **http**, which stands for hypertext transfer protocol. Hypertext transfer protocol is the communications standard (protocol) for transfering Web pages. The domain is represented by **www.domain.com**, and **/path/page.htm** illustrates the format for the optional page reference. In an actual Web page reference, the domain (**www.domain.com**) and the optional page specification (**/path/page.htm**) would be replaced with the domain name of the Website being accessed and the (optional) path and file name of the desired page.

Each domain must be registered with an organization that is responsible for assigning maintaining domain information. Each domain is associated with a specific location on the World Wide Web called its Web address. These addresses are composed of four three-digit numbers separated by periods (i.e. 230.195.013.212). (Goldman 2001) Domain information is kept in databases at specific locations accessible to the World Wide Web. When a user requests to view a website, browser software on the user's computer references the databases to determine the Web address of the website in question. A request is sent to the Web server at the address obtained from the domain database. The Web server at that address equates the domain to a specific folder located on the server. It locates a file in the designated folder titled INDEX.HTM and sends that file to the requesting computer. This file represents the homepage for that website. The Web homepage may be titled HOME.HTM on some system.[2]

Additional pages in the website are usually arranged in folders that are subordinate to the folder that contains the homepage. The folder system is used to organize additional pages that are referenced through the home page in the same way that folders are used to organize files on a drive. System administrators frequently use this type of folder arrangement to allow certain users access to certain areas of the website, without giving all users access to all pages of the website. Ideally, the instructors are given access to folders that contain information relevant to the courses they teach. This access allows the appropriate faculty to post course materials to the website.

The Web presence may be maintained internally, or it may be outsourced. If maintained in-house, the Web files frequently reside on a server within the institution. If the folders that contain the website files are accessible through the institution's network, it is possible to add content to the website directly, provided the user has been granted access privileges to the necessary folders. If access privileges are not available to the course instructors or if the website is maintained off-site, the institution will designate a specific individual, sometimes call the Webmaster, to post all files to Web folders. This is done to ensure that all postings adhere to institutional policies for Web content, and to maintain security. If the institution allows only the Webmaster to access the system, then all postings to the Web must be forwarded to the Web Master. The institution should have a mechanism in place to handle posting requests.

The URL will allow a browser to find a specific server on the Web. By including the file and path in the URL any file within that Web server can be accessed, even if there are no links from existing Web pages to that file. Faculty can place information on the Web, by either directly accessing the Web folders or by requesting postings from a Webmaster. Once the file is posted in the website, students can be given the complete URL to the file.

Students can access the file by entering the URL, complete with the path and file, into the browser. Links from other Web pages are not needed.

For example, let us place the syllabus for a course numbered CPT250 on the Web. The original syllabus is saved under the name **Syl250Fall01.htm** in the **My Documents** folder on the local C:/ drive. The Web site domain is **pua.edu**. The files used to generate this website are located on a network drive designated **W:/**. The CPT250 Web page is located in the **/courses/cpt/cpt250/** folder. Since a folder already exists for CPT250, we will place the syllabus in it. You Webmaster should be able to provide information on the folder layout for your Web site. Begin by moving the syllabus in the Web folder. Use Windows Explorer to copy the file **Syl250Fall01.htm** from the **My Documents** folder on the **C:/** drive to the **/courses/cpt/cpt250/** folder on the **W:** drive. The last step is to provide students with the complete URL of the page, **http://www.pua.edu/courses/cpt/cpt250/Syl250Fall01.htm**. Students can access the syllabus by entering this URL into a browser.

Many institutions provide a common template for course Web pages. The common template promotes a consistent look and feel to the Website, and also helps keep individual course pages consistent with Web policies. The Webmaster creates a Web page for each course from the template. Links are provided to the individual course pages from the home page. The template often contains links to such common components as grades, syllabi, and class notes. Exploiting these available links will ease student access to the information.

The key to using a predefined link from an existing page is knowing what the link accesses. Links are actually instructions to the browser to retrieve and display another Web page. Recall that Web pages are contained in files. Thus, a link contains the name of the file to be accessed. When a file of that name is placed in the appropriate folder, the link will retrieve and display the information from that file. Predefined links can be used only if the file name and path of the file the link accesses are known. The Webmaster should be able to provide this information or post files to the proper locations for you if access is restricted.

The file name is defined in the link when the Web page is created and is not easily changed. However, it is easy to change the name of a file. Changing the name of a file to match that specified in the link will cause the browser to display the information in that file. As an example, let us assume that a faculty member has a syllabus for CPT250 that needs to be posted to the CPT250 Web page. The original syllabus is saved under the name **Syl250Fall01.htm** in the **My Documents** folder on the local C:/ drive. The institution's Web site has a page for CPT250 with a *Syllabus* link that displays a file called **Syllabus.htm**. The website domain is **pua.edu**. The files needed to generate the website are located on a network drive designated **W:/**. The CPT250 Web page is located in the **/courses/cpt/cpt250/** folder. Again, we will place the document there. First, rename the **Syl250Fall01.htm** file to **Syllabus.htm,** the name of the file the *Syllabus* link will access. Next, copy the file into **W:/courses/cpt/cpt250**, the folder the link accesses. Use Windows Explorer to complete the rename and copy operations. If a file named Syllabus.htm already exists in the **/courses/cpt/cpt250** folder you will be prompted to replace it. Once the file has been successfully copied into the **/courses/cpt/cpt250** folder, clicking the *Syllabus* link will retrieve and display the syllabus.

The Browser

The browser is the application that allows a user to view information downloaded from Web servers. (Walters 2001) The user enters the URL of the website to be viewed. The browser locates the Web address from the domain database and sends a request to the appropriate Web server. The Web server downloads the requested files to the browser and the browser generates and displays the web page. The user must enter the exact URL in order for the browser to find the desired Web server.

Browsers use the data contained in the downloaded files to generate the Web page. This data must be presented to the browser in a format the browser understands. If the browser cannot understand the data presented, it cannot generate a Web page from it. The most common file format for generating text in a Web page is the HTML format. Hyper Text Markup Language is a formalized set of rules for specifying how text will be displayed. HTML adds additional information (called tags) to the text that instructs the browser on how the text should be displayed. As the text is downloaded, the tags are interpreted and the text is displayed accordingly.

Browsers can also display images in a Web page. Again, the data used to generate the image must be presented to the browser in a format that it understands. Most browsers understand many graphical formats. Some of the more frequently encountered graphical file formats are GIF, JPG, and PNC. Browsers can also generate audio from files using the WAV or MIDI format, and full motion video from A VI, MOV, and MPG formatted files. (Cadenhead 1999)

The browser can also provide limited access to files that are not in a format that it can understand. When the browser is asked to access a file in a type it does not recognized, it will offer the user the option if opening the

file or saving it to a local drive. If the user opts to open the file, the browser will hand the task over to the local operating system. The operating system will check the file extension to determine if it is a file associated with a specific application on the computer. If a corresponding application is found, then the operating system will start that application and open the file in it. If the operating system does not find an application that it associates with the file extension, it will open a dialog box and ask the user to select the application to use to access the file. If the save option is selected instead of the open option, the operating system starts a download wizard that allows the user to select a location and name on a local drive where the file will be saved.

Generating Web Content: Common Personal Productivity Tools

The wide acceptance and use of the World Wide Web has affected much of the personal productivity software currently available. Many of the tools faculty currently use to generate course materials now have provisions for saving data in formats that browsers can understand. Word processors, spreadsheets, database, and presentation software now allow users to save documents in HTML format. Existing documents can be re-saved in HTML format, allowing creation of Web materials without additional work in a separate software tool. Once in HTML format, these files can be made available to students by placing them on the website. Students can, in turn, access the files through links in existing Web pages, or by entering the path and file name in the URL. All this is possible with a minimum of additional effort, using software the user is already familiar with. The keys to success are: 1) saving the documents in a format browsers understand and 2) placing these documents in the website where a browser can find them.

Saving in HTML: A Microsoft Word Example

Microsoft's word processor, Word, will save documents in HTML format. The following example uses the technique described above to save an existing homework assignment document in HTML format and place it on the Web for student access. The document is currently saved in a file called **Homework10.doc** and is located in the **My Documents** folder on the local computer. The new HTML version of the assignment will be saved in the webpage **pua.edu** in the **/courses/cpt/cpt250** folder. The Website home folder is designated as the **W:/** network drive on the local computer.

Begin by retrieving the original document into Word. Once the document is retrieved, save it in HTML format by clicking the *File* menu, and then clicking the *Save as Web Page...* option in the dropdown list. A new *Save As* window appears. Note the *Save In:* dropdown list in the upper left corner of the *Save As* window. Clicking the down arrow to the right of the input box will produce a list of all available drives. Navigate through this list and double click the **W:/** drive. A folder list will appear below the **W:/** drive icon. Next double click the **/courses** folder. Double click the **/cpt** folder in the list that appears. Double click the **/cpt250** folder in the folder list that appears below the **/cpt** folder. This will select the **/courses/cpt/cpt250** folder to receive the HTML file. Enter the name of the new HTML version of the document by typing the new name, **HomeWork10**, in the *File Name:* input box in the lower center of the *Save As* window. Do not add the **.htm** extension. The system will automatically append the appropriate extension when it saves the document. Finally click the *Save* button in the lower right corner of the *Save As* window. The HTML version of the homework assignment is now saved. Since the file was saved in a folder that is part of the Website, students are able to access the homework assignment on the Web by typing **http://pua.edu/courses/cpt/cpt250/HomeWork10.htm** in their browser's URL input box, or by clicking on a link to the file if one exists.

If direct access to the Web folders is not possible, the Webmaster will post the file to the website. First, save the Word document in HTML format per the example above but specify a local drive instead of the Web folder. Next send a request to the Webmaster to post the file to the Web. If the file will be accessed through the URL, the Webmaster should provide the complete URL after the posting is complete. If the file is to be accessed via an existing link, the Webmaster can place and name the file so the link operates properly.

Saving in HTML: A Microsoft Excel Example

Microsoft Excel, a popular spreadsheet application, will also save in HTML format. It is a common practice to post grades in a public place so students can monitor their status. This example illustrates how the Web can be used to post grades for student review by saving an existing grade spreadsheet in HTML format and placing it on the Web where students can access it. The grade spreadsheet is currently saved in a file named **GSP250F01.xls**. It is located in the **My Documents** folder on the local computer. The new HTML version of the

grade posting will be saved with the name **grades.htm**, in the **/courses/cpt/cpt250/** folder of the website **pua.edu**, designated as the **W:/** network drive on the local computer.

The first task is to retrieve the spreadsheet and save it in HTML format. Start Excel and open the **GSP250F01.xls** spreadsheet. Next, save the spreadsheet in HTML format by selecting the *File* option from the menu bar, and clicking the *Save as Web Page...* option in the dropdown list. The *Save As* window appears. Locate the *Save In:* input box and use the down arrow to the right to display the list of available drives and folders. Navigate through this list until the **W:/courses/cpt/cpt250** folder is located and double click that folder. Below the *Save In:* input box is a *Save:* section. This consists of two option buttons labeled *Entire Workbook* and *Selection Sheet*. Click the *Entire Workbook* option. In the *File Name:* input box enter the file name **grades**. Do not include the **.htm** file extension. Excel will append the extension onto the file name when the file is saved. Verify that the *Save as Type:* input box contains **Web Page**. If not, open the list by clicking the down arrow to the right of the input box and select the **Web Page** option. Finally, click the *Save* button. The grade posting spreadsheet will be saved as **W:/courses/cpt/cpt250/grades.htm**. Students can access the grades on the Web by entering **http://www.pua.edu/courses/cpt/cpt250/grades.htm** (the complete URL) into the browser. Clicking a link, if one exists, can also access the grades.

If direct access to the Web folders is not possible, the Webmaster will post the file to the website. First, save the Excel spreadsheet in HTML format per the example above but specify a local drive instead of the Web folder. Next send a request to the Webmaster to post the file to the Web. If the file will be accessed through the URL, the Webmaster should provide the complete URL after the posting is complete. If the file is to be accessed via an existing link, the Webmaster can place and name the file so the link operates properly.

Generating Web Content: Downloads

The Web can also be used to make non-viewable files available. The browser cannot display the content of these types of files because they are saved in a format that the browser cannot understand. If the browser does not understand the format of a file, it will offer the user the option of opening the file using another application or downloading and saving the file to a local drive.

If the *Open* option is selected, the local system will check for an application that understands the format of the file. If the system finds an application that understands the format, the file can be opened and manipulated just as any other local file, with one exception. The local application cannot save the file back to the Web site. It must be saved on a local drive. If the system cannot find an application that understands the file format, it will present a list of all application available on the system and allow the user to select the application to use.

If the *Save* option is selected, the user is prompted to enter the location the file will be saved to. The user selects the desired location and initiates the download. The file is copied from the website to the local machine.

Downloading and Opening a Word Document: A Microsoft Word Example

This example illustrates opening a Microsoft Word document file from a website. The file is in Word's **.doc** format, which is not understood by the browser. We assume that the student has Microsoft Word available on the local computer. The Web file is a Word document named **Homework10.doc**. It is saved on the Web site **pua.edu** in the folder **/courses/cpt/cpt250/**. To access the file click on an existing link or enter the complete URL and path into the browser: **http://www.pua.edu/courses/cpt/cpt250/homework10.doc**. A Windows Wizard will open offering option buttons for *Open this file from its current location* or *Save this file to disk*. Select the *Open* option button. The local computer will search for an application that understands files in the **.doc** format. It identifies Microsoft Word as an application that understands **.doc** files, starts Word running on the local computer, and downloads **Homework10.doc** into Word. The document can now be manipulated with Word just as any other local document. It can be saved to a local drive using the normal save procedure in Word, but it cannot be saved to the Web site.

Downloading and Saving a Data File

The following example shows how to download a data file from a website. The file we want to transfer to the local computer is a data file to be used in a C++ programming assignment. The file name on the website is **InputData.dat**. The **.dat** extension indicates that this file contains data. Files with the **.dat** extension are not usually associated with any specific application and therefore cannot be opened from the website. The file is located on the **pua.edu** website in the folder **/courses/cpt/cpt250**. The goal is to change the file's name to **Proj3Input.dat**

and save it in the **/Documents** folder of the local **C:/** drive. Begin by starting the browser and entering the complete URL and path of the file: **http://www.pua.edu/courses/cpt/cpt250/InputData.dat**. The browser will start the *File Download* wizard. The first screen offers the user two option buttons; *Open this file from its current location* and *Save this file to disk*. Select the *Save this file to disk* option. The next screen is the *Save As* dialog box. Click the down arrow to the right of the *Save In:* input box and double click the **C:/** drive. A list of all folders available on the **C:/** drive will appear. Double click on the **Documents** folder. The folder will open, and its contents will be displayed in the window. Type **Proj3Input.dat** in the *File name* input box and click the *Save* button. As the download begins, the wizard will display a status screen that shows the file source and destination information, the estimated time to complete the download, and the data transfer rate. When the download is complete, the screen will show statistics on the download process. The file is now in the folder **C:/Documents/**, under the name **Proj3Input.dat**. Verify this by opening Windows Explorer and viewing the contents of the **C:/Documents** folder.

Conclusion

The Web is an information source that offers many faculty – student communications opportunities. Both faculty and students can benefit from the on-demand information availability the Web offers. The Web support features included in today's personal productivity software will allow faculty to develop basic Web content with little or no additional effort. These features, used in conjunction with the existing Web presence of most institutions provides a framework on which faculty can grow course support with little or no Web development experience. This places Web course support within reach of most faculty.

References

Goldman, James E. (1997). Local Area Networks: A Client Server Approach. New York: John Wiley & Sons.

Shelly, Gary B., Cashman, Thomas J., & Vermaat, Misty E. (2000). Microsoft Office 200: Introductory Concepts and Techniques (enhanced ed.). Boston, MA: Course Technologies.

Goldman, James E., & Rawles, Phillip T. (2001). Applied Data Communications: A Business Oriented Approach (3rd. ed.). New York: John Wiley & Sons.

Walters, E. Garrison. (2001). The Essential Guide to Computing. Upper Saddle River, NJ: Prentice-Hall.

Cadenhead, Rogers. (1999). Teach Yourself Microsoft FrontPage 2000 in 24 Hours. Indianapolis, IN: Sams.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

X	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").